

TECHNIQUES FOR NETWORK TRAFFIC ENGINEERING

Abstract

In a traffic engineering technique, a determination is made as to whether any path of a number of predetermined paths meets requirements corresponding to a request. The predetermined paths are determined by substantially maximizing carried demand using at least traffic demand estimates and network topology information and by performing routing for the substantially maximized carried demand. If a given path meeting the requirements is found, a connection on the given path is created, if possible. The predetermined paths are determined through offline TE techniques referred to herein as offline design-based routing (DBR). The requirements for the path may include a destination address and a bandwidth. The offline DBR techniques can include uncertain static demand information or dynamic connections. The offline DBR techniques may be used with adaptive DBR techniques, such that paths are determined offline if possible but can also use shortest path first (SPF), constrained SPF (CSPF) or other techniques during an online path determination. An improvement to a conventional CSPF technique is also presented.